PolyVision®

1. Product Name
   PolyVision® a³™ CeramicSteel Panels

2. Manufacturer
   PolyVision
   10700 Abbotts Bridge Road
   Johns Creek, Ga 30097
   Phone: 678-542-3020
   Fax: 678-542-3233
   Email: info@polyvision.com
   Web: www.polyvision.com

3. Product Description
   Since 1954, PolyVision has been an industry leader in durable surfaces, architectural cladding and whiteboards. With offices on three continents and installations throughout the world, PolyVision offers quality products with short lead times and outstanding customer support.

   Basic Use
   PolyVision a³ CeramicSteel Panels are porcelain enameled steel panels, designed for aesthetics, as well as long term durability. Comprised of steel and porcelain, the extremely flat panels allow a continuous, uninterrupted design that requires little maintenance. a³ CeramicSteel Panels are offered with a selection of color, surface, substrate and finish options and are ideal for high traffic environments in new construction and renovation projects:
   - Lobbies, corridors
   - Hospitals
   - Offices
   - Airports
   - Subway and railway stations
   - Underpasses, tunnels
   - Escalators

   Types
   - Standard Panel 1: a³ CeramicSteel Panel with cement-bonded particle board and galvanized steel back
   - Standard Panel 2: a³ CeramicSteel Panel with calcium silicate fire resistant board and galvanized steel back
   - Protected Edge 1: a³ CeramicSteel Panel with a calcium silicate fire resistant board and galvanized steel back
   - Protected Edge 2: a³ CeramicSteel Panel with a calcium silicate fire resistant board and galvanized steel backer
   - Finished Edge 1: a³ CeramicSteel Panel with cement-bonded particle board and galvanized steel backer

   Sizes, Composition, Materials
   See Table 1.

   Colors
   - Traffic White
   - Signal White
   - Cream
   - Light Ivory
   - Light Gray
   - Mouse Gray
   - Traffic Red
   - Sky Blue
   - Gentian Blue
   - Jet Black
   - Custom color-matching is optional; contact PolyVision for information

   Finish
   a³ CeramicSteel Panels are available in matte or high gloss finish.

   Benefits
   - Nonporous, impervious surface protects against graffiti and staining
   - Easily cleaned with water and solvent
   - Colorfast
   - Scratch resistant
   - Corrosion resistant
   - Chemical resistant
   - Bacteria resistant
   - Fire resistant
   - Reduced life cycle costs

   Options, Accessories
   - Surface imaging
   - Custom color matching
### Table 1 – Size and Composition

<table>
<thead>
<tr>
<th>Model/property</th>
<th>Standard Panel 1</th>
<th>Standard Panel 2</th>
<th>Protected Edge 1</th>
<th>Protected Edge 2</th>
<th>Finished Edge 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Face</strong></td>
<td>0.56 mm steel enameled in porcelain; 0.84 mm total thickness</td>
<td>0.56 mm steel enameled in porcelain; 0.84 mm total thickness</td>
<td>0.56 mm steel enameled in porcelain; 0.84 mm total thickness</td>
<td>0.022” (0.56 mm) steel enameled in porcelain; 0.03” (0.84 mm) total thickness</td>
<td>0.022” (0.56 mm) steel enameled in porcelain; 0.03” (0.84 mm) total thickness</td>
</tr>
<tr>
<td><strong>Edge</strong></td>
<td>None</td>
<td>None</td>
<td>Water-resistant Polyvinylchloride tape</td>
<td>Water-resistant Polyvinylchloride tape</td>
<td>High build, high solids siloxane coating</td>
</tr>
<tr>
<td><strong>Core</strong></td>
<td>Cement bonded particle board; 12 mm</td>
<td>Calcium Silicate fiber board, 11 mm; fire-resistant</td>
<td>Cement bonded particle board; 12 mm</td>
<td>Calcium Silicate fiber board, 11 mm; fire-resistant</td>
<td>Cement bonded particle board 12 mm</td>
</tr>
<tr>
<td><strong>Back</strong></td>
<td>Cold rolled galvanized steel, 0.015” (0.4 mm)</td>
<td>Cold rolled galvanized steel, 0.4 mm</td>
<td>Cold rolled galvanized steel, 0.4 mm</td>
<td>Cold rolled galvanized steel, 0.4 mm</td>
<td>Cold rolled galvanized steel, 0.4 mm</td>
</tr>
<tr>
<td><strong>Adhesive</strong></td>
<td>Hot melt polyurethane</td>
<td>Rubber based contact adhesive</td>
<td>Hot melt polyurethane</td>
<td>Rubber based contact adhesive</td>
<td>Hot melt polyurethane</td>
</tr>
<tr>
<td><strong>Thickness</strong></td>
<td>13.4 mm</td>
<td>12.4 mm</td>
<td>13.4 mm</td>
<td>13.4 mm</td>
<td>13.4 mm</td>
</tr>
<tr>
<td><strong>Master panel size</strong></td>
<td>47.24’ × 120” (1200 mm × 3050 mm)</td>
<td>47.24’ × 120” (1200 mm × 3050 mm)</td>
<td>47.24’ × 120” (1200 mm × 3050 mm)</td>
<td>47.24’ × 120” (1200 mm × 3050 mm)</td>
<td>46.64” × 118.1” (1185 mm × 3000 mm)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>23.3 kg/m²</td>
<td>21 kg/m²</td>
<td>23.3 kg/m²</td>
<td>21 kg/m²</td>
<td>23.3 kg/m²</td>
</tr>
</tbody>
</table>

### Table 2 – Technical Properties

<table>
<thead>
<tr>
<th>Model/property</th>
<th>Standard Panel 1</th>
<th>Standard Panel 2</th>
<th>Protected Edge 1</th>
<th>Protected Edge 2</th>
<th>Finished Edge 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tension, ASTM C297</strong></td>
<td>Break load 3500 N</td>
<td>Break load 1277 N</td>
<td>Break load 3500 N</td>
<td>Break load 1277 N</td>
<td>Break load 3500 N</td>
</tr>
<tr>
<td><strong>Shear, ASTM D1002</strong></td>
<td>1070 N, 0.169 kg/mm²</td>
<td>110 N, 0.017 kg/mm²</td>
<td>1070 N, 0.169 kg/mm²</td>
<td>110 N, 0.017 kg/mm²</td>
<td>1070 N, 0.169 kg/mm²</td>
</tr>
<tr>
<td><strong>Fire classification, EN 13501</strong></td>
<td>B, s1, d0</td>
<td>AB, s1, d0</td>
<td>B, s1, d0</td>
<td>B, s1, d0</td>
<td>B, s1, d0</td>
</tr>
<tr>
<td><strong>Aging of sandwich constructions, ASTM C481</strong></td>
<td>Cycle-B: No delamination after 6 test cycles</td>
<td>Cycle-B: No delamination after 6 test cycles</td>
<td>Cycle-B: No delamination after 6 test cycles</td>
<td>Cycle-B: No delamination after 6 test cycles</td>
<td>Cycle-B: No delamination after 6 test cycles</td>
</tr>
<tr>
<td><strong>Pencil Hardness, ASTM D3363</strong></td>
<td>&gt;9H</td>
<td>&gt;9H</td>
<td>&gt;9H</td>
<td>&gt;9H</td>
<td>&gt;9H</td>
</tr>
<tr>
<td><strong>Wear resistance, ASTM C501</strong></td>
<td>Max. 0.1g</td>
<td>Max. 0.1g</td>
<td>Max. 0.1g</td>
<td>Max. 0.1g</td>
<td>Max. 0.1g</td>
</tr>
<tr>
<td><strong>Color stability, ASTM C538</strong></td>
<td>$\Delta E^{*}&lt;5$ (24h)</td>
<td>$\Delta E^{*}&lt;5$ (24h)</td>
<td>$\Delta E^{*}&lt;5$ (24h)</td>
<td>$\Delta E^{*}&lt;5$ (24h)</td>
<td>$\Delta E^{*}&lt;5$ (24h)</td>
</tr>
<tr>
<td><strong>Reflectance, ASTM D2244</strong></td>
<td>Y-Value up to 93%</td>
<td>Y-Value up to 93%</td>
<td>Y-Value up to 93%</td>
<td>Y-Value up to 93%</td>
<td>Y-Value up to 93%</td>
</tr>
<tr>
<td><strong>Color tolerance, ASTM D2244</strong></td>
<td>$\Delta E^{*}&lt;1.5$</td>
<td>$\Delta E^{*}&lt;1.5$</td>
<td>$\Delta E^{*}&lt;1.5$</td>
<td>$\Delta E^{*}&lt;1.5$</td>
<td>$\Delta E^{*}&lt;1.5$</td>
</tr>
<tr>
<td><strong>Orange peel, ASTM D523</strong></td>
<td>SW ≤ 55; LW ≤ 25 Distinctness of image ≥ 60</td>
<td>SW ≤ 55; LW ≤ 25 Distinctness of image ≥ 60</td>
<td>SW ≤ 55; LW ≤ 25 Distinctness of image ≥ 60</td>
<td>SW ≤ 55; LW ≤ 25 Distinctness of image ≥ 60</td>
<td>SW ≤ 55; LW ≤ 25 Distinctness of image ≥ 60</td>
</tr>
<tr>
<td><strong>Neutral salt spray, ISO 9227</strong></td>
<td>&lt; 24 h</td>
<td>&lt; 24 h</td>
<td>&lt; 24 h</td>
<td>&lt; 24 h</td>
<td>&lt; 24 h</td>
</tr>
<tr>
<td><strong>Scratch Resistance, ISO 15695</strong></td>
<td>Min. 7 N</td>
<td>Min. 7 N</td>
<td>Min. 7 N</td>
<td>Min. 7 N</td>
<td>Min. 7 N</td>
</tr>
<tr>
<td><strong>Sound reduction index, EN ISO 10140</strong></td>
<td>32 dB (Rw)</td>
<td>32 dB (Rw)</td>
<td>32 dB (Rw)</td>
<td>32 dB (Rw)</td>
<td>32 dB (Rw)</td>
</tr>
<tr>
<td><strong>Gravitt resistance, EN ISO 2872</strong></td>
<td>No color or gloss change after cleaning</td>
<td>No color or gloss change after cleaning</td>
<td>No color or gloss change after cleaning</td>
<td>No color or gloss change after cleaning</td>
<td>No color or gloss change after cleaning</td>
</tr>
<tr>
<td><strong>UV resistance, ISO 4892</strong></td>
<td>$\Delta E^{*}&lt;0.5$ (2000 h)</td>
<td>$\Delta E^{*}&lt;0.5$ (2000 h)</td>
<td>$\Delta E^{*}&lt;0.5$ (2000 h)</td>
<td>$\Delta E^{*}&lt;0.5$ (2000 h)</td>
<td>$\Delta E^{*}&lt;0.5$ (2000 h)</td>
</tr>
<tr>
<td><strong>Impact, ISO 4532</strong></td>
<td>No damage over 2 mm after 24 h (20 N load)</td>
<td>No damage over 2 mm after 24 h (20 N load)</td>
<td>No damage over 2 mm after 24 h (20 N load)</td>
<td>No damage over 2 mm after 24 h (20 N load)</td>
<td>No damage over 2 mm after 24 h (20 N load)</td>
</tr>
<tr>
<td><strong>Cold acid resistance, ISO 2876-1-9</strong></td>
<td>Min. Class A</td>
<td>Min. Class A</td>
<td>Min. Class A</td>
<td>Min. Class A</td>
<td>Min. Class A</td>
</tr>
<tr>
<td><strong>Boiling acid resistance, ISO 2876-2-10</strong></td>
<td>Max. 18.5 g/m²</td>
<td>Max. 18.5 g/m²</td>
<td>Max. 18.5 g/m²</td>
<td>Max. 18.5 g/m²</td>
<td>Max. 18.5 g/m²</td>
</tr>
</tbody>
</table>
4. Technical Data

Applicable Standards

ASTM International (ASTM)
- ASTM C297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions
- ASTM C481 Standard Test Method for Laboratory Aging of Sandwich Constructions
- ASTM C501 Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser
- ASTM C538 Method for Color Retention of Red, Orange, and Yellow Porcelain Enamels
- ASTM D1002 Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal)
- ASTM D2244 Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
- ASTM D3363 Standard Test Method for Film Hardness by Pencil Test

International Organization for Standardization (ISO)
- ISO 4532 Vitreous and porcelain enamels – Determination of the resistance of enamelled articles to impact – Pistol test
- ISO 4892 Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps
- ISO 9227 Corrosion tests in artificial atmospheres – Salt spray tests
- ISO 28722 Vitreous and porcelain enamels - Characteristics of enamel coatings applied to steel panels intended for architecture
- ISO 10140 Acoustics – Laboratory measurement of sound insulation of building elements – Part 1: Application rules for specific products
- ISO 15695 Vitreous and porcelain enamels – Determination of scratch resistance of enamel finishes
- ISO 28706-1 Vitreous and porcelain enamels – Determination of resistance to chemical corrosion – Part 1: Determination of resistance to chemical corrosion by acids at room temperature
- ISO 28706-2-10 Vitreous and porcelain enamels – Determination of resistance to chemical corrosion by boiling acids, boiling neutral liquids and/or their vapours
- ISO 28722 Vitreous and porcelain enamels – Characteristics of enamel coatings applied to steel panels intended for architecture

Certifications, Approvals

European Enamel Authority EEA 2004
- EEA 7.13 Interiors
- EEA 7.14 Exteriors

Porcelain Enamel Institute (PEI)
- PEI 1001

PolyVision has been certified for:
- ISO 9001 Quality Management Systems
- ISO 14001 Environmental Managements Systems
- OHSAS 18001 Occupational Health and Safety Management Systems

5. Installation

Preparatory Work

Deliver product in manufacturer's original, unopened, undamaged containers with identification labels intact. Store protected from exposure to harmful environmental conditions, above floor level, dry, frost-free and at temperature and humidity levels recommended by the manufacturer.

Precautions

Exercise care during off-loading and installation to avoid damage and marring of finishes. Refer to the manufacturer's Architectural Panel Handling Instructions for details.

Methods

PolyVision a³ CeramicSteel Panels must be installed by manufacturer approved personnel, trained and experienced in skills required. Comply with manufacturers written instructions. Set units plumb, level and true to line, without warp or rack of clips or panels. Provide proper support and anchor securely in place.

Make field cuts as necessary for penetrations using a power panel saw or skill saw. Use metal cutting, high tooth-count, carbide tip blades liberally lubricated with blade wax. The use of a NIOSH approved respirator is recommended when saw cutting fiber-cement core panels. Seal penetrations with silicone sealant.

Building Codes

Ensure installation complies with the requirements of all applicable local, state and federal code jurisdictions.
6. Availability and Cost
PolyVision a3 CeramicSteel Panels are sold direct and through authorized dealers throughout the U.S., Canada and worldwide. Contact PolyVision for availability and cost information within a specific region.

7. Warranty
Limited International Surface Warranty
PolyVision a3 CeramicSteel
PolyVision Corporation warrants all porcelain enameled a3 CeramicSteel surfaces used for architectural applications to be free from defects in materials and workmanship to be free from defects in materials and workmanship to be free from defects in materials and workmanship for the periods set forth herein. This limited warranty is valid from the date of shipment.

Surface: 20-year limited warranty
PolyVision warrants that surfaces, under normal atmospheric conditions and when sealed from moisture, will not fade, stain, discolor, craze, crack, flake, corrode or peel for a period of 20 years.

Panel Construction: 10-year limited warranty
PolyVision warrants that panels, under normal atmospheric conditions and when sealed from moisture, will not delaminate from the substrate or warp for a period of 10 years.

Warranty does not apply to product failure or loss resulting from:
- Failure to laminate to sufficiently rigid substrate
- Normal wear and tear
- Abuse, misuse, vandalism or accident
- Alteration or modification of the product
- Faults in underlying structure or panel attachment

Panel Construction: Warranty does not cover:
Materials and services supplied by purchaser or a third party in connection with the fabrication, installation, or maintenance of the product (including, but not limited to, adhesives, sealing agents, substrates, and lamination).

Contact PolyVision for details.

8. Maintenance
No special maintenance is required. Panels can be cleaned with detergent or solvent. Refer to the manufacturer’s Product Care and Cleaning Instructions for details.

9. Technical Services
Technical assistance, including detailed information, product literature, test results, project lists and assistance in preparing project specifications is available from PolyVision, Inc.

10. Filing Systems
- CMD Spec-Data
- Additional product information is available from the manufacturer upon request